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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,574	03/14/2005	Sebastien Perrot	PF020112	7078

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EXAMINER	
RUTKOWSKI, JEFFREY M	

ART UNIT	PAPER NUMBER
2473	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/527,574	PERROT ET AL.
	Examiner	Art Unit
	JEFFREY M. RUTKOWSKI	2473

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 April 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7 and 9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim 8 has been cancelled.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. **Claims 1-3, 6 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa et al. ("Frame Transfer Protocol with Shortcut between Wireless Bridges"), hereinafter referred to as Ichikawa, in view of Hart ("Extending the IEEE 802.1 MAC Bridge Standard to Remote Bridges") and Mahajan et al. (US Pat 6,628,624), hereinafter referred to as Mahajan.

4. For **claims 1 and 9**, Ichikawa teaches a wireless bridging network that makes use of Transparent Bridging Protocol (TBP) in a wireless network **[page 1705, Section I and page 1706, figure 2]**. TBP makes use of Spanning Tree Protocol (STP) to establish a network tree **[page 1705, Section II, 2nd paragraph]**. Ichikawa's wireless bridges have an interface connected to a wired network (first interface) as well as an interface (second interface) connected

a wireless network **[page 1706 figure 2]**. Each node in Ichikawa's invention maintains its own filtering database Ichikawa suggests the use of a microprocessor means **[figure 2]**.

5. Ichikawa discloses each AP has a constant number of wired ports but a variable number of wireless ports **[figure 6]**. For example, AP-5 has two wireless ports while the other APs have three wireless ports. From figure 6, any difference in the number of ports among the APs is based upon the number of wireless ports. Ichikawa does not disclose a root (parent) election procedure that is based on the number of ports of a bridge. Hart discloses a root (parent) selection technique where the bridge which has the most ports is elected root **[page 13, 1st paragraph, left column]**. Figure 3 of Hart shows the spanning tree that is formed after the root (parent) bridge is elected **[page 13]**. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use Hart's root election procedure in Ichikawa's invention to not force a customer to have to assign a priority value **[page 13, 1st paragraph, left column]**.

6. The combination of Ichikawa and Hart disclose a root election process that is based upon a number of bridge ports. The combination of Ichikawa and Hart does not disclose the types of ports are considered as part of the spanning tree. Mahajan discloses it is well-known in the art that administratively disabled ports are excluded from the spanning tree **[col. 2 lines 38-40]**. Since active and inactive ports are not administratively disabled, it would have been obvious to a person of ordinary skill in the art at the time of the invention to take into consideration the number of active and inactive ports in Ichikawa's invention because the Spanning Tree Protocol (STP) considers all enabled ports as part of the spanning tree.

7. Specifically for **claim 1**, Ichikawa discloses *wireless ports adapted to directly connect other wireless devices* (figure 4 shows the wireless devices are directly connected via full mesh

network topology; see page 1707). The combination of Ichikawa and Hart discloses *directly connecting each other bridge portals to a wireless ports of the elected parent portal* (figure 4 of Ichikawa shows a full mesh topology where each bridge portal is directly connected via full mesh topology; see page 1707. Hart discloses connecting bridge portals to elected parent portals; see page 13 figures 3-4).

8. For **claim 2**, in Ichikawa's invention the number of physical and virtual ports is limited to the number of ports needed to interconnect LANs via wireless mesh **[figure 2]**. The respective number of ports are configurable according to the number of LANs needed to interconnect and the number of wireless interfaces that make-up the mesh. For example, it is well-known in the art that a wireless bridge can have more than one physical port so that more than one LAN can use the same wireless bridge.

9. For **claim 3**, Ichikawa does not disclose an elected portal being root on a local bus. Hart discloses a root that is the only portal on a bus **[page 13, figure 3]**. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use Hart's topology in Ichikawa's invention to increase the Quality of Service (QoS) provided by remote bridges **[page 10, Introduction]**.

10. For **claim 6**, Ichikawa does not disclose an invalid topology. Mahajan discloses STP is used to eliminate loops (invalid topology) in a network by placing ports in a blocking state **[col. 2 lines 13-40]**. It would have been obvious to a person of ordinary skill in the art at the time of the invention to reject new portals to prevent an invalid topology in Ichikawa’s invention to prevent loops from being formed in the network.

11. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa in view of Hart and Mahajan, as applied to **claim 1** above, and further in view of IEEE Standard 802.1w.

12. For **claim 4**, which depends from **claim 1**, the combination of Ichikawa, Hart and Mahajan do not teach a new root (parent) bridge is elected when a new bridge portal is ATTACHED to the spanning tree network. The IEEE Standard 802.1w teaches a new bridge to a spanning tree can result in the changing of port roles in all or part of a network **[page 35, final paragraph]**. It would have been obvious to a person of ordinary skill in the art at the time of the invention to elect a new root (parent) bridge in Meier's invention since the new bridge may have better connectivity (i.e. access to more bandwidth) than the previous root bridge.

13. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa in view of Hart, Mahajan and IEEE Standard 802.1w as applied to **claim 4** above, and further in view of Moriya (US Pg Pub 2002/0027887).

For **claim 5**, which depends from **claim 4**, the combination of Ichikawa, Hart, Mahajan and IEEE Standard 802.1w disclose the election of a root (parent) portal. The combination of Hart, Mahajan, Suzuki and IEEE Standard 802.1w does not teach verifying a free virtual port. Moriya teaches a health check function that checks to see if other nodes are connected to an unused port **[0077]**. It would have been obvious to a person of ordinary skill in the art at the time of the invention verify an open port in Meier's invention to make sure the bridge has enough resources to handle the new portal.

14. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa in view of Hart and Mahajan, as applied to **claim 1** above, and further in view of Meier (WO 95/12942).

15. The combination of Ichikawa, Hart and Mahajan does not disclose storing the source of an alert. Meier teaches if a parent cannot contact a child node, the parent node marks a table entry for the child node as UNATTACHED, adds an alert for the child to node to an alert list (failure cause of a portal to a parent portal) and sends an alert request to the root **[page 45, 2nd paragraph]**. It would have been obvious to a person of ordinary skill in the art at the time of the invention to store the source of an alert in a node in Suzuki's invention to provide information that can be examined to find the cause of a network failure.

Response to Arguments

16. The arguments with respect to it being unreasonable to infer that electing a parent portal based on the greatest number of wireless ports would include the wired ports are not persuasive. The claim scope does not exclude the wired ports from being taken into consideration since the claim used the open-ended transitional phrase "comprising" (see MPEP 2111.03). The Examiner agrees that the claims do require the bridge with the most wireless ports to be root. Figure 6 of Ichikawa does show wireless bridges where the only difference between the bridges is the number of wireless ports that each bridge supports. Hart's figure 3 shows Bridge A (root bridge) has the most ports, seven total, that connect to the other bridges and was elected to be the root. According to the combination of Ichikawa and Hart, the bridge that is elected root is the bridge with the most wireless ports because figure 6 of Ichikawa shows that all bridges have a single wired port but a variable number of wireless ports.

17. The arguments with respect to there being no reason to rely on the number of wireless ports to prioritize the APs of Ichikawa because this process would not differentiate APs that have the same number of wireless ports (i.e. AP-1 to AP-4) are not persuasive. There still is a reason

to rely on the number of wireless ports because taking the wireless ports into account would differentiate AP-5 from the rest of the APs because AP-5 has less wireless ports than AP-1 to AP-4 (see figure 6).

18. The arguments with respect to choosing the bridge with the smallest station address is not equivalent to choosing the bridge with the most wireless ports because the station address is not directly tied to the number of wireless ports are not persuasive. Since AP-1 to AP-4 in Ichikawa's invention have the most (greatest number of) wireless ports (see figure 6), a tie-breaker is needed. Hart's tie-breaker uses the station addresses of the bridges to determine (elect) the bridge that is to be root. Therefore, the combination of Ichikawa and Hart directly ties the station address to the number of wireless ports.

19. The arguments with respect to a root according to IEEE 802.1D not being equivalent to the claimed invention because other bridge portals are connected to the ports of the elected parent portal are not persuasive. Figure 4 of Ichikawa shows a network based on Spanning Tree Protocol that is a full mesh. According to the combination of Ichikawa and Hart, the bridge that is elected root will have other bridge portals connected to the ports of the root bridge (see Ichikawa, figure 4).

20. Applicant's arguments filed 04/01/2010 have been fully considered but they are not persuasive, for the reasons stated above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY M. RUTKOWSKI whose telephone number is (571)270-1215. The examiner can normally be reached on Monday - Friday 7:30-5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeffrey M Rutkowski/
Examiner, Art Unit 2473

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